UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
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October 17, 2011

Mr. Kevin Bronson
Site Vice President
Entergy Nuclear Northeast
James A. FitzPatrick Nuclear Power Plant
P. O. Box 110
Lycoming, NY 13093

SUBJECT: JAMES A. FITZPATRICK NUCLEAR POWER PLANT - NRC TRIENNIAL FIRE PROTECTION INSPECTION REPORT 05000333/2011007

Dear Mr. Bronson:

On September 30, 2011, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your James A. FitzPatrick Nuclear Power Plant (FitzPatrick). The enclosed inspection report documents the inspection results, which were discussed with Mr. Brian Sullivan, General Manager, Plant Operations, and other members of your staff on September 30, 2011.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed station personnel.

Based on the results of this inspection, no findings were identified.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response (if any) will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system, Agencywide Documents Access and Management System (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

John F. Rogge

John F. Rogge, Chief
Engineering Branch 3
Division of Reactor Safety

Docket No.: 50-333
License No.: DPR-59

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Site Vice President
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James A. FitzPatrick Nuclear Power Plant
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/RA/

John F. Rogge, Chief
Engineering Branch 3
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Docket No.: 50-333
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w/Attachment: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No.:	50-333
License No.:	DPR-59
Report No.:	05000333/2011007
Licensee:	Entergy Nuclear Northeast (Entergy)
Facility:	James A. FitzPatrick Nuclear Power Plant
Location:	Scriba, New York
Dates:	September 12, 2011 through September 30, 2011
Inspectors:	J. Richmond, Senior Reactor Inspector (Team Leader) W. Cook, Senior Reactor Analyst L. Scholl, Senior Reactor Inspector K. Young, Senior Reactor Inspector A. Rao, Reactor Inspector
Approved by:	John F. Rogge, Chief Engineering Branch 3 Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000333/2011007; 09/12/2011 - 09/30/2011; James A. FitzPatrick Nuclear Power Plant; Triennial Fire Protection Inspection.

This report covered a two week on-site triennial fire protection team inspection by specialist inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

No findings were identified.

REPORT DETAILS

Background

This report presents the results of a triennial fire protection inspection conducted in accordance with NRC Inspection Procedure (IP) 71111.05T, "Fire Protection." The objective of the inspection was to assess whether Entergy Nuclear Northeast (Entergy) had implemented an adequate fire protection program and that post-fire safe shutdown capabilities had been established and were properly maintained at the James A. FitzPatrick Nuclear Power Plant (FitzPatrick). The following fire areas (FA) and associated fire zones (FZ) were selected for detailed review based on prior inspection results and risk insights from the FitzPatrick Individual Plant Examination of External Events:

Fire Areas (Fire Zones)

- 1D (CT-4), North Cable Tunnel (Elevation 286)
- 06 (EG-3, EG-4, and EG-6), "B" and "D" EDG Rooms, and "B/D" EDG Switchgear Room
- 09 (RB-1A), Reactor Building East Side (Elevation 272), Southeast Quadrant (Elevation 300), entire floor at Elevations 326, 344, and 369

Inspection of these FAs/FZs fulfilled the inspection procedure requirement to inspect a minimum of three samples.

The inspection team evaluated Entergy's fire protection program (FPP) against applicable requirements which included plant Technical Specifications, Operating License Condition 2.C.(3), NRC Safety Evaluation Reports (SERs), 10 CFR 50.48, 10 CFR Part 50, Appendix R, and Branch Technical Position (BTP) Auxiliary and Power Conversion Systems Branch (APCSB) 9.5-1 and Appendix A. The team also reviewed related documents that included the Updated Final Safety Analysis Report (UFSAR), Section 9.8-1, FPP, Fire Hazards Analyses (FHA), and 10 CFR Part 50, Appendix R, Safe Shutdown Analysis (SSD) Report.

The team also evaluated aspects of three mitigating strategies for addressing large fires and explosions as required by Operating License Condition 2.R. Inspection of the strategies fulfills the inspection procedure requirement to inspect a minimum of one sample.

Specific documents reviewed by the team are listed in the attachment to this report.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R05 Fire Protection (IP 71111.05T)

.01 Protection of Safe Shutdown Capabilities

a. Inspection Scope

The team reviewed the FHA, SSD, and supporting drawings and documentation to verify whether the safe shutdown capabilities were properly protected. The team evaluated equipment and cable separation to determine whether applicable separation

requirements of Section III.G of 10 CFR Part 50, Appendix R, and FitzPatrick's design and licensing bases were maintained for the credited safe shutdown equipment and their supporting power, control, and instrumentation cables. This review included an assessment of the adequacy of the selected systems for reactivity control, reactor coolant makeup, reactor heat removal, process monitoring, and associated support system functions.

b. Findings

No findings were identified.

.02 Passive Fire Protection

a. Inspection Scope

The team walked down accessible portions of the selected FAs to evaluate whether the observed material conditions of the FA boundaries were adequate for the fire hazards in the area. The team compared the FA boundaries, including walls, fire doors, fire dampers, penetration seals, electrical raceway fire barriers, and redundant equipment fire barriers to design basis requirements, industry standards, and the FitzPatrick FPP, as approved by the NRC, to identify any potential degradation or non-conformances.

The team reviewed selected engineering evaluations, installation work orders, and qualification records for a sample of penetration seals to determine whether the fill material was properly installed and whether the as-left configuration satisfied design requirements for the intended fire rating. The team also reviewed the most recent inspection records for fire dampers, penetration fire barrier seals, and fire separation barriers for the selected fire areas, to verify whether the inspection and testing was adequately conducted, the acceptance criteria were met, and any potential performance degradation was identified.

In addition, the team reviewed the most recent test results of the carbon dioxide (CO_2) fire damper functionality tests for the north cable tunnel and the B/D emergency diesel generator (EDG) switchgear room to verify whether the testing was adequately conducted, the acceptance criteria were met, and any potential performance degradation was identified.

b. Findings

No findings were identified.

.03 Active Fire Protection

a. Inspection Scope

The team evaluated the fire detection and suppression systems in the selected fire areas to determine whether they were installed, tested, maintained, and operated in accordance with NRC requirements and approved exemptions, National Fire Protection

Association (NFPA) codes of record, and the FitzPatrick FPP, as approved by the NRC. The team also assessed whether the suppression systems capabilities were adequate to control and/or extinguish fires associated with the hazards in the selected areas.

The team reviewed the design capability of the fire water supply system to verify whether the design basis and NFPA code requirements for the hazards involved were adequately satisfied. The team reviewed the fire water system hydraulic analyses to assess the adequacy of a single fire water pump to supply the largest single hydraulic load on the fire water system plus concurrent fire hose usage. The team evaluated the motor-driven and diesel-driven fire pump capacity tests to assess the adequacy of the test acceptance criteria, for pump minimum discharge pressure at the required flow rate, to satisfy design basis and hydraulic analysis requirements. The team also evaluated the underground fire loop flow tests to verify whether the tests adequately demonstrated that the flow distribution circuits were able to meet design basis requirements. In addition, the team reviewed the most recent pump and loop flow test results to verify whether the testing was adequately conducted, the acceptance criteria were met, and any potential performance degradation was identified.

The team reviewed initial discharge testing, design specifications, modifications, and engineering evaluations for the CO_2 suppression systems for the north cable tunnel and the B/D EDG switchgear room. The team also reviewed and walked down the associated fire fighting strategies and CO_2 system operating procedures.

The team walked down accessible portions of the detection and suppression systems in the selected areas and major portions of the fire water supply system, including motor and diesel driven fire pumps, interviewed system and program engineers, and reviewed selected open condition reports to assess the material condition of the systems and components. In addition, the team reviewed the most recent test results for the fire detection and suppression systems for the selected fire areas to verify whether the testing was adequately conducted, the acceptance criteria were met, and any potential performance degradation was identified.

The team assessed the fire brigade capabilities by reviewing training, qualification, and drill critique records. The team also reviewed Entergy's fire fighting strategies (i.e., pre-fire plans) and smoke removal plans for the selected FAs to determine if appropriate information was provided to fire brigade members and plant operators to identify safe shutdown equipment and instrumentation, and facilitate suppression of a fire that could impact post-fire safe shutdown capability. The team independently inspected the fire brigade equipment, including personnel protective gear (e.g., turnout gear) and smoke removal equipment, to determine operational readiness for fire fighting. In addition, the team reviewed Entergy's fire brigade equipment inventory and inspection procedures and the most recent inspection and inventory results to verify whether adequate equipment was available, and whether any potential material deficiencies were identified.

b. Findings

No findings were identified.

.04 Protection from Damage from Fire Suppression Activities

a. Inspection Scope

The team walked down the selected FAs and adjacent areas, and reviewed selected documents to determine whether redundant safe shutdown trains could be potentially damaged from fire suppression activities or from the rupture or inadvertent operation of fire suppression systems. Specifically, to determine whether a potential existed to damage redundant safe shutdown trains, the team evaluated whether:

- A fire in one of the selected FAs would not release smoke, heat, or hot gases that could cause unintended activation of suppression systems in adjacent fire areas which could potentially damage all redundant safe shutdown trains;

- A fire suppression system rupture, inadvertent actuation, or actuation due to a fire, in one of the selected FAs, could not indirectly damage all redundant trains (e.g., sprinkler caused flooding of other than the locally affected train); and

- Adequate drainage was provided in areas protected by water suppression systems.

b. Findings

No findings were identified.

.05 Alternative Shutdown Capability

a. Inspection Scope

The team reviewed the SSA, operating procedures, piping and instrumentation drawings (P&ID), electrical drawings, the UFSAR, and other supporting documents for the selected FAs to verify whether Entergy had properly identified the systems and components necessary to achieve and maintain safe shutdown conditions.

The team evaluated selected systems and components for reactivity control, reactor coolant makeup, reactor heat removal, process monitoring, and support system functions to assess the adequacy Entergy's alternative shutdown methodology. In addition, the team assessed whether alternative post-fire shutdown could be performed both with and without the availability of offsite power. The team walked down selected plant configurations to verify whether they were consistent with that described in the safe shutdown and FHA. The team also evaluated whether the systems and components credited for use during shutdown would remain free from fire damage.

The team reviewed the training program for licensed and non-licensed operators to verify whether it included alternative shutdown capability. The team also verified whether personnel required for safe shutdown using either the normal or alternative shutdown systems and procedures were trained and available onsite at all times, exclusive of those assigned as fire brigade members.

The team reviewed the adequacy of procedures utilized for post-fire shutdown and performed an independent walk through of procedure steps to assess the adequacy of implementation and human factors within the procedures. The team also evaluated the time required to perform specific actions to verify whether operators could reasonably be expected to perform those actions within sufficient time to maintain plant parameters within specified limits.

Specific procedures reviewed for normal and alternative post-fire shutdown included:

- AOP-28, Operation during Plant Fires, Rev. 19
- AOP-43, Plant Shutdown From Outside the Control Room, Rev. 34

The team reviewed selected manual actions to verify whether they had been properly reviewed and approved and whether the actions could be implemented in accordance with plant procedures in the time necessary to support the safe shutdown method for each FA. The team also reviewed the periodic testing of the alternative shutdown transfer and isolation capability, and instrumentation and control functions to evaluate whether the tests were adequate to ensure the functionality of the alternative shutdown capability.

The team also reviewed the periodic testing of the alternative shutdown transfer and isolation capability, and instrumentation and control functions to evaluate whether the tests were adequate to ensure the functionality of the alternative shutdown capability.

b. Findings

No findings were identified.

.06 Circuit Analysis

a. Inspection Scope

The team reviewed Entergy's post-fire SSD for the selected FAs and determined whether the analysis appropriately identified the structures, systems, and components important to achieving and maintaining safe shutdown. Additionally, the team assessed Entergy's analysis to verify whether the necessary electrical circuits were properly protected and whether circuits that could adversely impact safe shutdown due to hot shorts or shorts to ground were identified, evaluated, and dispositioned to ensure spurious actuations would not prevent safe shutdown.

The team's review considered fire and cable attributes, cable routing, potential undesirable consequences and common power supply/bus concerns. Specific items included the credibility of the fire threat, cable insulation attributes, cable failure modes, and actuations resulting in flow diversion or loss of coolant events.

The team also reviewed cable raceway drawings and the cable routing database for a sample of components required for post-fire safe shutdown to determine whether those cables were routed as described in the SSD. The team also reviewed equipment

important to safe shutdown, but not part of the success path, to assess whether Entergy's actions were appropriate and conformed to design and licensing basis requirements and NRC Regulatory Guide 1.189, "Fire Protection for Nuclear Power Plants," Revision 2.

Cable failure modes were reviewed for the following components:

- 10MOV-166B, "B" Residual Heat Removal (RHR) Heat Exchanger Inboard Vent Valve;
- 23MOV-16, High Pressure Coolant Injection (HPCI) Outboard Steam Supply Valve;
- 46MOV-101B, "B" Emergency Service Water (ESW) System Injection Valve; and
- 46MOV-102B, "B" ESW System Test (Minimum Flow) Valve.

The team reviewed a sample of circuit breaker coordination studies to determine whether equipment needed for post-fire safe shutdown activities could be adversely affected due to a lack of coordination that could result in a common power supply or common bus concern.

The team assessed the transfer of control from the control room to the alternative shutdown location(s) to determine whether it would be affected by fire-induced circuit faults (e.g., by the provision of separate fuses and power supplies for alternative shutdown control circuits).

b. Findings

No findings were identified.

.07 Communications

a. Inspection Scope

The team reviewed safe shutdown procedures, the SSD, and associated documents to verify whether an adequate method of communications would be available to plant operators following a fire. During this review, the team considered the effects of ambient noise levels, clarity of reception, reliability, and coverage patterns. The team inspected the designated emergency storage lockers to independently verify whether portable radios for the fire brigade and for plant operators would be available. In addition, the team evaluated whether communications equipment such as repeaters and transmitters would be unaffected by a fire.

b. Findings

No findings were identified.

.08 Emergency Lighting

a. Inspection Scope

The team walked down the emergency lights in the selected FAs to independently evaluate the placement and coverage areas of the lights. The team assessed whether the lights provided adequate illumination on local equipment and instrumentation required for post-fire safe shutdown, to ensure local operations could be reliably performed under expected post-fire conditions. Emergency light placement was also evaluated to determine adequate illumination of local area access and egress pathways.

The team verified whether the emergency light batteries were rated for at least an eight-hour capacity. Preventive maintenance procedures, the vendor manual, completed surveillance tests, and battery replacement practices were also reviewed to evaluate whether the emergency lighting was being maintained in a manner that would ensure reliable operation.

b. Findings

No findings were identified.

.09 Cold Shutdown Repairs

a. Inspection Scope

Entergy did not identify any systems or components that would require repairs to achieve post-fire cold shutdown. The team assessed Entergy's determination that no dedicated repair procedures, equipment, or materials were needed to accomplish repairs of components required for cold shutdown which might be damaged by a fire, to verify whether cold shutdown could be achieved within the time frames specified in the design and licensing bases without performing any cold shutdown repairs.

b. Findings

No findings were identified.

.10 Compensatory Measures

a. Inspection Scope

The team verified whether compensatory measures were in place for out-of-service, degraded, or inoperable fire protection and post-fire safe shutdown equipment, systems, or features (e.g., detection and suppression systems and equipment, passive fire barriers, pumps, valves, or electrical devices providing safe shutdown functions or capabilities). The team evaluated whether the short term compensatory measures adequately compensated for the degraded function or feature until appropriate corrective action could be taken and whether Entergy was effective in returning the equipment to service in a reasonable period of time.

b. Findings

No findings were identified.

.11 Review and Documentation of Fire Protection Program Changes

a. Inspection Scope

The team reviewed recent changes to the approved FFP to assess whether those changes had an adverse effect on the ability to safely shutdown.

b. Findings

No findings were identified.

.12 Control of Transient Combustibles and Ignition Sources

a. Inspection Scope

The team reviewed Entergy's procedures and programs for the control of ignition sources and transient combustibles to assess their effectiveness in preventing fires and in controlling combustible loading within limits established in the FHA. A sample of hot work and transient combustible control permits were reviewed to assess the adequacy of Entergy's FFP administrative controls. The team performed plant walkdowns to independently verify whether transient combustibles and ignition sources were being properly controlled in accordance with the administrative controls.

b. Findings

No findings were identified.

.13 Large Fires and Explosions Mitigation Strategies

a. Inspection Scope

The team conducted a review of selected mitigation strategies intended to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with loss of large areas of the plant due to explosions or fire. The team assessed whether Entergy continued to meet the requirements of Operating License condition 2.R. The team reviewed three mitigation strategies:

- Manual operation of the reactor core isolation cooling system;
- Reactor coolant system depressurization and injection using the fire pumper truck; and
- Containment venting.

The team's review included: a detailed assessment of the procedural guidance; a walkdown of the strategy with a trained operator to assess the feasibility of the strategy

and operator familiarity; maintenance and surveillance testing of all designated strategy equipment; and an inventory check of all strategy equipment to ensure the appropriateness of equipment storage and availability. The team also evaluated the adequacy of corrective actions associated with issues identified during the Temporary Instruction 2515/183 Inspection, documented in NRC Inspection Report No. 05000333/2011008.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems (IP 71152)

a. Inspection Scope

The team reviewed a sample of condition reports associated with the FitzPatrick FPP and post-fire safe shutdown issues to determine whether Entergy was appropriately identifying, characterizing, and correcting problems associated with these areas, and to assess whether the planned or completed corrective actions were appropriate. The condition reports reviewed are listed in the attachment.

b. Findings

No findings were identified.

4OA6 Meetings, including Exit

The team presented the inspection results to Mr. Brian Sullivan, General Manager, Plant Operations, and other members of Entergy's staff on September 30, 2011. The team verified that this report does not contain proprietary information.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Entergy Personnel

T. Andersen, Electrical Design Engineer
H. Borick, Operations Procedure Coordinator
P. Colman, Engineering Planning & Management (EPM), Consulting Engineer
G. Dorman, Senior Licensing Specialist
M. Hawes, Licensing Specialist
R. Jennings, Fire Protection Instructor
D. Koelbel, Fire Protection System Engineer
R. Lathrop, Licensed Operator Instructor
J. Pachacek, Manager, Licensing
K. Smith, Licensed Reactor Operator
D. Stokes, Fire Protection Program Engineer
J. Walkowiak, Assistant Operations Manager, Shift

NRC Personnel

E. Knutson, Senior Resident Inspector - FitzPatrick
S. Rutenkroger, Resident Inspector - FitzPatrick
K. Cronk, Resident Inspector - FitzPatrick
D. Frumkin, Fire Protection Branch, Division of Risk Assessment, Office of the Nuclear Reactor Regulation (NRR)
P. Qualls, Fire Protection Branch, Division of Risk Assessment, NRR

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

None.

LIST OF DOCUMENTS REVIEWED

Fire Protection Licensing and Design Basis Documents

AP-14.01, Fire Protection Program, Rev. 11
DBD-071, 4160V and 600V AC Electrical Distribution Systems Design Basis, Rev. 2
DBD-076, Carbon Dioxide Systems, Rev. 3
DBD-076, Tab II, Fixed Suppression Systems, Rev. 4
DBD-076, Tab XI, Shutdown Communications System, Rev. 3
JAF-RPT-FPS-01975, 10 CFR Part 50, Appendix R Safe Shutdown Analysis, Rev. 2
JAF-RPT-FPS-02367, Fire Protection Plan, Rev. 12
NRC Branch Technical Position (BTP) APCSB 9.5-1 and Appendix A, Guidelines for Fire Protection for Nuclear Power Plants

NRC Letter and Safety Evaluation Report (SER), Amendment No. 47 to Facility Operating License Adding License Conditions Relating to the Completion of Facility Modifications for Fire Protection (ML010580413), dated 8/1/79
NRC Letter and SER, Alternate Safe Shutdown Capability, Modifications and Exemptions to Meet Appendix R of 10 CFR Part 50 - Fire Protection (ML091310130), dated 4/26/83
NRC Letter and SER, Exemption from Appendix R to 10 CFR 50 Concerning Core Uncovery during Alternate Safe Shutdown (ML010600092), dated 9/15/86
NRC Letter and SER, Exemption from Certain Requirements of Section III.G.2.c of Appendix R to 10 CFR Part 50 (ML010790125), dated 5/29/01
NRC Letter and SER, Exemption Requests -10 CFR 50.48 Fire Protection and Appendix R to 10 CFR Part 50 (ML010600137), dated 1/11/85
NRC Letter, Exemption Requests -10 CFR 50.48 Fire Protection and Appendix R to 10 CFR Part 50 (ML010600147), dated 2/1/84
NRC Letter, Issuance of Exemptions from the Requirements of 10 CFR Part 50, Appendix R (ML010920013), dated 9/10/92
USFAR Section 9.8, Fire Protection System, Rev. 10

Calculations and Engineering Analysis

111825-76-4, CO_2 Storage, 11/13/69
JAF-ANAL-FPS-01409, Drywell Access Area 86-10 Evaluation, Rev. 0
JAF-CALC-FPS-00699, JAF Low Pressure Carbon Dioxide System, 3/22/93
JAF-ECAF-L16-MCC163, 600 VAC Electrical Distribution System Coordination Adequacy Form, Rev. 0
JAF-ECAF-MCC163-C2A, 600 VAC Electrical Distribution System Coordination Adequacy Form, Rev. 0
JAF-ECAF-MCC165-0B2, 600 VAC Electrical Distribution System Coordination Adequacy Form, Rev. 0
JAF-RPT-04-00478, Fire Hazards Analysis, Rev. 2
JAF-RPT-10-00004, Regulatory Guide 1.189 Support Project Final Report, Rev. 0
JAF-RPT-ELEC-00763, Evaluation of the Susceptibility to Water Spray of 71MCC-151 and 71MCC-161, Rev. 0
JAF-RPT-FPS-01490, NFPA Code Conformance Review Report, Rev. 0
JAF-RPT-FPS-01532, NFPA Code Conformance Review, Summary of Open Items, Rev. 0
JAF-RPT-FPS-01940, CO_2 Protected Area Integrity Activities Study Including CSR Integrity Test, Rev. 2
JAF-RPT-FPS-01975, 10 CFR Part 50, Appendix R Safe Shutdown Analysis Report, Rev. 2
JAF-RPT-MISC-02598, Peak Clad Temperature for an Appendix R Fire Event, Rev. 0
JAF-RPT-MISC-02599, Peak Clad Temperature for an Appendix R Fire Event, Rev. 0
JAF-SE-92-223, Basis and Justification for Operator Actions in AOP-28, 11/20/92
LO-LAR-2008-00021 CA 00026, Condenser Hotwell Volume, Rev. 0
MDE-137-0585, Analysis to Extend Operator Action Time for Alternate Shutdown Panels in Support of Fitzpatrick Compliance with Appendix R, Rev. 2
P-1969, Manual Operator Actions, Rev. 0
PEP-FAB-95-283, Reactor Bldg. App-R Water Curtain Closure Memorandum, dated 8/16/95

Piping and Instrumentation Diagrams

FB-10H, Reactor Building Service Water Cooling System 66, Rev. 43
FM-15A, Reactor Bldg. Cooling Water System 15, Rev. 64
FM-20A, Residual Heat Removal System Flow Diagram, Rev. 72
FM-20B, Residual Heat Removal System Flow Diagram, Rev. 68
FM-22A, Reactor Core Isolation Cooling System Flow Diagram, Rev. 54
FM-23A, Core Spray System Flow Diagram, Rev. 49
FM-25A, Emergency Service Water System Flow Diagram, Rev. 56
FM-25A, High Pressure Coolant Injection System Flow Diagram, Rev. 73
FM-27A, Control Rod Drive System 03, Rev. 39
FM-27B, Control Rod Drive System 03, Rev. 33
FM-29A, Main Steam System 29, Rev. 57
FM-29B, Main Steam System 29, Rev. 50
FM-33A, Condensate System 33, Rev. 63
FM-34A, Feedwater System 34, Rev. 67
FM-47A, Nuclear Boiler Vessel Instruments System 02, Rev. 50

Drawings and Wiring Diagrams

1.60-20, Analog Trip System ATTS Elem. Diag., Rev. K
1.60-21, Analog Trip System ATTS Elem. Diag., Rev. K
1.64-30, Core Spray System Elem. Diag., Rev. R
1.64-35, Core Spray System Elem. Diag., Rev. K
1.83-37, Auto Depressurization System Elem. Diag., Rev. 19
1.83-38, Auto Depressurization System, Rev. Q
1.83-39, Sht. 1, Auto Depressurization System Elem. Diag., Rev. M
1.83-39, Sht. 2, Auto Depressurization System Elem. Diag., Rev. B
ESK-11AAM, ADS Relief Value 02ADS SOV-71A2 Elem. Diag., Rev. 5
ESK-11AAQ, 09-ECCS1-EP and 09-ECCS2-EP Elem. Diag., Rev. 1
ESK-11AAU, 09-ECCS1-EP and 09-ECCS2-EP Elem. Diag., Rev. 1
ESK-11AAV, 09-ECCS1-EP and 09-ECCS2-EP Elem. Diag., Rev. 1
ESK-11AK, HPCI System 23MOV-14 /16 Elem. Diag., Rev. 20
ESK-11AQ, Residual Core Isolation Cooling (RCIC) System Outboard Steam Supply Isolation and Steam to Turbine MOVs Elem. Diag., Rev. 18
ESK-13HA, Safe Shutdown Panels Elem. Diag., Rev. 3
ESK-5BM, 4160 Circuit Bus 10600 93-EDGB and 93-EDGD Tie ACB 10604 Elementary Diagram (Elem. Diag.), Rev. 27
ESK-6HQ, Emergency Service Water (ESW) System Block Valve Elem. Diag., Rev. 13
ESK-6HS, ESW System Bypass Valve Elem. Diag., Rev. 12
ESK-6MAJ, Core Spray Pump Inboard Discharge Valves 14MOV-12A/B Elem. Diag., Rev. 9
ESK-6MAK, Core Spray Pump Outboard Discharge Valves 14MOV-11A/B Elem. Diag., Rev. 9
ESK-6MD, RHR Heat Exchanger Vent Valves 10MOV-166A/B Elem. Diag., Rev. 13
ESK-8GC, 4160V Synchronizing Circuits Elem. Diag., Rev. 7
ESK-8HB, "B" Emergency Diesel Generator Elem. Diag., Rev. 23
FB-48A, Flow Diagram Fire Protection Water Piping System 76, Rev. 33
FB-48B, Site Utilities Fire Protection Water Supply Flow Diagram, Rev. 11
FB-49B, Flow Diagram Fire Protection Water Piping System, Rev. 10

FB-51B, Conduit Plan Fire Detection, Rev. 4
FB-56A, Flow Diagram CO_2 and Foam Fire Extinguishing System, Rev. 14
FE-16E, Sht. 5, Communications Wiring Diagrams and Details, Rev. 1
FE-1AD,120V AC Emergency Bus A3, B3, B4, Distribution Panels 71ACA3&B3, 71ACA4&B4, 71ACNMS-A&B One Line Diagram, Rev. 26
FE-1AH, 125V DC One Line Diagram, Rev. 31
FE-1AJ, 125V DC One Line Diagram, Rev. 20
FE-1B, Station Service Transformers One Line Diagram, Rev. 13
FE-1D, 115KV Switchyard One Line Diagram, Rev. 10
FE-1J, 4160V Emergency Bus 10600 One Line Diagram, Rev. 15
FE-1L, 600V Switchgear 71L15/71L16, 71MCC-153 and 163 One Line Diagram, Rev. 34
FE-1N, 600V Switchgear 71L25/71L26, 71MCC-251 and 261 One Line Diagram, Rev. 23
FE-1R, 600V Switchgear 71 MCC-131, 141, 252, and 262 One Line Diagram, Rev. 29
FE-1Y, 600V Switchgear 71MCC-332, 342, 155, and 165 One Line Diagram, Rev. 37
FE-1Z, 600V, Sht. 15, 71MCC-253, 263, 254, and 264 One Line Diagram, Rev. 25
FM-47A, Nuclear Boiler Vessel Instruments System 02-3 Flow Diagram, Rev. 50
FPSSK-1, Fire Area/Zone Arrangement Plan Below El 272'-0", Rev. 1
FPSSK-1000, Fire Protection System Isometric Drawing Distribution System Screenwell, Rev. 1
FPSSK-1038, Fire Protection System Isometric Drawing Sprinkler System, Reactor Building Water Curtain #2, Rev. 1
FPSSK-2, Fire Area/Zone Arrangement Plan El 272'-0", Rev. 3
FPSSK-3, Fire Area/Zone Arrangement Plan El 300'-0", Rev. 3
FPSSK-4, Fire Area/Zone Arrangement Plan El 286'-0", 326'-9", 344'-6" and EL 369'-6", Rev. 2
FPSSK-220, Fire Barrier Penetration, Rev. 2
FPSSK-264, Fire Barrier Penetration Arrangement, Fire Area/Zone VI/EG-6 El. 272'-0", Rev. 2
FPSSK-265, Fire Barrier Penetration Arrangement, Fire Area/Zone II/CT-2 El. 256'-0", Rev. 2
FPSSK-308, Fire Barrier Penetration Arrangement, Fire Area/Zone 1D/CT-4 El. 286'-0", Rev. 2
FPSSK-362, Fire Barrier Penetration Arrangement, Fire Area/Zone XII/CT-4/CT-3, Rev. 5
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LP-06A, FWC ECCS Monitor Reactor Pressure Loop Diagram, Rev. 2
SE-9NS, Distribution Panel 71ACB4 Emergency Control and Instrument Bus B4, Rev. 13

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AP-05.12, Replacement of Electrical Fuses, Rev. 10
AP-14-01, Fire Protection Program, Rev. 11
AP-14-04, Fire Penetration Breach Permit, Rev. 7
AP-15.12, Receipt Inspection for Dedication of No. 2 Diesel Fuel Oil, Rev. 5
AP-17.02, Housekeeping and Cleanliness Control, Rev. 18
EN-DC-115, Engineering Change Development, Rev. 2
EN-DC-127, Control of Hot Work and Ignition Sources, Rev. 8
EN-DC-128, Fire Protection Program Impact Reviews, Rev. 4
EN-DC-161, Transient Combustible Evaluation, Rev. 5
EN-EV-112, Chemical Control Program, Rev. 11
FPP 3.50, Fire Engine Inspection, Rev. 0
FPP-1.11, Pre-Fire Plans, Rev. 5
MP-056.01, AC MCC Maintenance & Subcomponent Replacement, Rev. 71
MP-056.02, 120 VAC and 125 VDC Panel Board Maintenance, Rev. 7

MP-200.16, Maintenance and Subcomponent Replacement of GE 7700 Series DC MCCs, Rev. 37
SP-01.07, Diesel Fuel Oil Sampling and Analysis, Rev. 13
ST-28, Portable Diesel Generator Operability Test, Rev. 7
ST-43D, Remote Shutdown Panel 25ASP-3 Component Operation and Isolation Verification, Rev. 16
ST-76B, Electric Fire Pump 76P-2 Operational Check, Rev. 17
ST-76C, West Diesel Fire Pump 76P-1 Operational Check, Rev. 22
ST-76J23, West Diesel Fire Pump 76P-1 Performance Test, Rev. 19
ST-76J24, Electric Fire Pump 76P-2 Performance Test, Rev. 20
ST-76J29, Smoke Detector Functional Test - Rx Building 272, Rev. 11
ST-99C, Safe Shutdown Equipment Inventory and Panel Operability Verification, Rev. 31

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AOP-1, Reactor Scram, Rev. 44
AOP-28, Operation during Plant Fires, Rev. 19
AOP-43, Plant Shutdown From Outside the Control Room, Rev. 34
AOP-43, Attachment 1, Procedure Change Request, dated 9/15/11
AOP-43, Attachment 5, Procedure Change Request, dated 9/15/11
AOP-43, Attachment 8, Procedure Change Request, dated 9/15/11
AOP-49, Station Blackout, Rev. 17
AOP-49A, Station Blackout in Cold Condition, Rev. 7
AOP-52, Unexpected Fire Pump Start, Rev. 5
AOP-53, Loss of Spent Fuel Storage Pool, Reactor Head Cavity Well, or Dryer Separator Storage Pit Water Level, Rev. 9
AOP-70A, Airborne Security Threat, Rev. 6
AP-12.15, Control of Time Critical Operator Actions, Rev. 0
ARP-FPP-G, Alarm Response Procedure – Ionization Smoke Detector Alarm, Rev. 3
ARP-FPP-P, Alarm Response Procedure – Fire Main Pressure Low Alarm, Rev. 3
EN-OP-115, Attachment 9.5 – Shift Manning, Conduct of Operations, Rev. 11
EOP-2, RPV Control, Rev. 9
EOP-4, Primary Containment Control, Rev. 8
EP-1, EOP Entry and Use, Rev. 11
EP-2, Isolation/Interlock Overrides, Rev. 7
OP-05, Condensate Transfer System, Rev. 18
OP-14, Core Spray System, Rev.33
OP-65A, Normal Operation, Rev. 10

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JPM 2004205B4, Job Performance Measure – Plant Shutdown From Outside the Control Room – CRS – 10600 Bus Energized from Only "B" EDG, Rev. 5
JPM 2004205C, Job Performance Measure – Plant Shutdown from Outside the Control Room - RBAO Actions, Rev. 5

JPM 2004205G, Job Performance Measure – Plant Shutdown from Outside the Control Room - Subsequent Operator Actions From Battery "B" Control Board, Rev. 3
JPM 218010, Job Performance Measure – Bypass SRV Electric Lift Initiation Circuits, Rev. 0
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LP-AOP, Lesson Plan – Abnormal Operating Procedures, Rev. 7
SEG-51475-5-LOI, AOP-28, Alternate Shutdown Cooling Due to Plant Fire, Rev. 4
SEG-70930-0, Simulator Exercise Guide – AOP-28, Fire in MCC 162/143, Rev. 4
SEG-71775-1, Simulator Exercise Guide – Flow Unit "D" Failure, Loss of "B" Condensate Booster Pump (AOP-42), Rod Drift (AOP-27), Cable Spreading Room Fire (OP-28 and AOP-43), Rev. 0

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EC-08476, Main Transformer Fire Protection Deluge & Detection System Replacement, Performed 8/10/08
EC-14004, Reserve Station Transformer Replacement, Performed 12/01/09
EC-15323, Replace RWWR MG Set Scope Tube Actuators, Performed 8/03/10
EC-17551, 71UPS-1 MG Set Replacement with Static Inverter, Performed 9/13/10
EC-25731, On-Line Noble Metals injection ECP Monitoring, Performed 5/11/11
EN-DC-128, Fire Protection Input Review, TRM 3.7.M.3 Change, Rev. 0
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LO-JAFLO-2009-00100 CA-4, Pre-NRC Triennial Fire Protection Focused Assessment, 6/27-30/11
QA-9-2009-JAF-1, QA Audit Report, Fire Protection, 2/20/09
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4 KV Distribution System, 2nd Quarter 2011
600 V AC Distribution System, 2nd Quarter 2011
DC Distribution System, 2nd Quarter 2011

Completed Tests, Surveillances, and Preventive Maintenance

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FPP-3.49, Fire Protection Equipment Inspection, Performed 4/16/11 and 7/9/11
Jerome Fire Equipment Company, Pump Performance Evaluation, Performed 6/29/11
OP-65A Attachment 10, Normal Operation - Fire Hazard, Performed 9/22/11

ST-43A, Remote Shutdown Panel (RSP) 25RSP Component Operation and Isolation Verification, Performed 9/6/10
ST-43B, RSP 25ASP-1 Component Operation and Isolation Verification, Performed 5/15/10
ST-43C, RSP 25ASP-2 Component Operation and Isolation Verification, Performed 9/6/11
ST-43D, RSP 25ASP-3 Component Operation and Isolation Verification, Performed 9/8/10
ST-43E, Panel 66HV-3B Remote Shutdown Component Operation and Isolation Verification, Performed 10/31/10
ST-43G, RSP 25ASP-5 Component Operation and Isolation Verification, Performed 10/8/10
ST-43H, Circuit Breaker 10614 Remote Shutdown Operation & Isolation Verification, Performed 9/28/10
ST-43I, Remote Shutdown Instrument Check, Performed 8/5/11
ST-43K, RSP Component Operation & Isolation Verification, Performed 10/3/10 and 10/10/10
ST-76J20, Smoke/Heat Detector Functional and CO_2 Simulated Automatic/Manual Initiation Test, North Emergency Switchgear Room, Performed 4/18/08, 5/6/10, and 5/27/10
ST-76J50, Heat Detector Functional Test – Stairwell Water Spray Boundaries Numbers 6 and 8, Performed 4/10/08 and 4/23/10
ST-76X, Nozzle Air Flow Test for Water Curtain Spray Boundaries Number 1 through 8, Performed 10/29/05 and 10/29/08
ST-76Z, Fire Damper Inspection, Performed 6/4/07
ST-99C, Safe Shutdown Equipment Inventory and Panel Operability Verification, Performed 3/18/11

Fire Fighting Strategies (i.e., Pre-Fire Plans)

PFP-PWR06, North Cable Run Room, Elevation 286, Rev. 1
PFP-PWR12, Relay Room Elevation 286, Rev. 4
PFP-PWR13, Main Control Room Elevation 300, Rev. 6
PFP-PWR20, Reactor Bldg East Elevation 272, Rev. 4
PFP-PWR21, Reactor Bldg West Elevation 272, Rev. 5
PFP-PWR24, Reactor Bldg East Elevation 300, Rev. 5
PFP-PWR25, Reactor Bldg West Elevation 300, Rev. 3
PFP-PWR26, Reactor Bldg Elevation 326, Rev. 3
PFP-PWR27, Reactor Bldg Elevation 344, Rev. 4
PFP-PWR28, Reactor Bldg Elevation 369, Rev. 7
PFP-PWR32, Emergency Diesel Generator Spaces, Elevation 272, Rev. 3
PFP-PWR33 Safety Pump Rooms, Elevation 255, Rev. 1
PFP-PWR46 TB South - E&W Elect Bays, Rev. 4

Fire Brigade Training

FP-13-4.1, Fire Protection, Self Contained Breathing Apparatus, Rev. 6
FPP-1-13, Fire Brigade Equipment Inventory, Rev. 1
JLP-FP-13.10, Fire Apparatus Operator Training, Rev. 1
SAP-3, Emergency Communications Testing, Rev. 80
Task Qualification Matrix, dated 8/23/11

Fire Brigade Drills and Critiques

5/23/10	3/10/11	6/20/11
9/20/10	3/24/11	6/22/11
11/3/10	3/29/11	6/26/11
11/10/10	3/31/11	
12/1/10	4/20/11	

Large Fires and Explosions Mitigation Strategies Documents

TSG-7, Torus Spray Injection, Rev. 1
TSG-8, Extending Site Blackout Coping Time, Starting an EDG, Injection to Vessel with no DC Power Available, Rev. 3
TSG-9, Primary Containment Venting without AC Power, Rev. 3
TSG-10, Mitigating a Large-Scale Security Event, Rev. 4
TSG-11, Additional Resources for Extreme Damage Events, Rev. 2
TSG-12, B.5.b Extreme Damage Scenario Mitigating Strategies, Rev. 4

Condition Reports [* NRC identified during this inspection]

CR-JAF-2008-03711	CR-JAF-2010-03360	CR-JAF-2011-02132
CR-JAF-2008-04331	CR-JAF-2010-07832	CR-JAF-2011-02154
CR-JAF-2008-04334	CR-JAF-2010-07836	CR-JAF-2011-02214
CR-JAF-2008-04548	CR-JAF-2010-07909	CR-JAF-2011-04628*
CR-JAF-2009-00170	CR-JAF-2010-07935	CR-JAF-2011-04631
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CR-JAF-2009-00543	CR-JAF-2011-01443	CR-JAF-2011-04792*
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CR-JAF-2009-02113	CR-JAF-2011-01493	CR-JAF-2011-04827*
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CR-JAF-2010-01417	CR-JAF-2011-01662	CR-JAF-2011-04935*
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CR-JAF-2010-01606	CR-JAF-2011-01681	LO-JAFLO-2009-00100 CA-011*
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CR-JAF-2010-02718	CR-JAF-2011-01883	LO-NOE-2009-00102 CA-013
CR-JAF-2010-02754	CR-JAF-2011-01924	LO-NOE-2009-00516 CA-012
CR-JAF-2010-02861	CR-JAF-2011-01955	

Work Orders

00125317	51193266	52234725
00128658	51193443	52247623
00128660	51193448	52252079
00148287	51193468	52300785
00257889	51690023	52355227
51100914	51690945	PMRQ 50054763
51103021	52209976	PMRQ 50054777

Vendor Manuals

Viking Valve Vendor Manual, Flow Control Valve Models G1, G2

Industry Standards

ASTM D 7371-2007, Test method for Biodiesel Content in Diesel Fuel Oil
Nuclear Energy Institute (NEI) 2000-01, Guidance for Post Fire Safe Shutdown Circuit Analysis, Rev. 2
NEI 2006-12, B.5.b Phase 2 and 3 Submittal Guideline (ML070090060), Rev. 2
NFPA 13-1972, Installation of Sprinkler Systems
NFPA 15-1982, Water Spray Fixed Systems
NFPA 72E-1978, Auto Fire Detectors

Miscellaneous Documents

Fire Protection System Impairment Record 08-19, dated 6/23/08
Fire Protection System Impairment Record 11-31, dated 5/16/11
Fire Protection System Impairment Record 11-34, dated 5/22/11
Fire Protection System Impairment Record 11-52, dated 8/03/11
JAF-NE-09-00001, Appendix H5, Probabilistic Safety Assessment – Operator Interviews, Rev. 0
JAF-RPT-MSIC-02751, Emergency Lighting Maintenance Rule Basis Document, Rev. 5
JENG-11-0034, Maintenance Rule Expert Panel Meeting Minutes, dated 7/19/11
Letter JPN-83-44, PASNY to NRC, Appendix-R Exemption Requests, dated 5/19/83
Letter, PASNY to NRC, Fire Protection Program Safe Shutdown Scenario and Time Table, dated 12/22/92
NRC Information Notice (IN) 2006-22, Ultra-Low-Sulfur Diesel Fuel Oil Could Adversely Impact Diesel Engine Performance, 10/12/06
NRC IN 2009-02, Biodiesel Fuel Oil Adverse Impact to Diesel Engine Performance, 2/23/09
NRC IN 2009-29, Potential Failure of Fire Water Supply Pumps to Automatically Start Due to a Fire, 11/24/09
NRC Regulatory Guide 1.189, Fire Protection for Nuclear Power Plants, Rev. 2

LIST OF ACRONYMS

ADAMS	Agencywide Documents Access and Management System
ADS	Auto Depressurization System
AOP	Abnormal Operating Procedure
APCSB	Auxiliary and Power Conversion Systems Branch
ASD	Alternative Shutdown System
ASTM	American Society for Testing and Materials
BTP	[NRC] Branch Technical Position
CDF	Core Damage Frequency
CFR	Code of Federal Regulations
CO_2	Carbon Dioxide
CR	Condition Report
EDG	Emergency Diesel Generator
Entergy	Entergy Nuclear Northeast
ESW	Emergency Service Water
FHA	Fire Hazards Analysis
FitzPatrick	James A. FitzPatrick Nuclear Power Plant
FPP	Fire Protection Program
FA	Fire Area
FZ	Fire Zone
HPCI	High Pressure Coolant Injection
IN	[NRC] Information Notice
IP	[NRC] Inspection Procedure
IR	[NRC] Inspection Report
MOV	Motor Operated Valve
NEI	Nuclear Energy Institute
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
OP	Operating Procedure
PAR	Publicly Available Records
P&ID	Piping and Instrumentation Drawing
PRA	Probabilistic Risk Assessment
RCIC	Residual Core Isolation Cooling
RHR	Residual Heat Removal
RSP	Remote Shutdown Panel
SDP	[NRC] Significance Determination Process
SER	[NRC] Safety Evaluation Report
SSD	Safe Shutdown Analysis
SSC	Structures, Systems and Components
TSG	[Severe Accident Management] Technical Support Guideline
UFSAR	Updated Final Safety Analysis Report